NATUNLD Utility

- Invoking NATUNLD
- Programming Objects
- DDMs
- Error Messages
- Delete Instructions for Programming Objects
- Delete Instructions for DDMs
- Delete Instructions for Error Messages
- Executing NATUNLD in Batch Mode
- NATUNLD Direct Command Syntax
- NATUNLD Report

Invoking NATUNLD

To invoke the NATUNLD utility

- In batch mode (see also Executing NATUNLD in Batch Mode), enter a direct command.
- Online, enter the system command NATUNLD.
  The Unload Programming Objects menu of the NATUNLD utility is displayed.

Programming Objects

When you invoke NATUNLD online, the Unload Programming Objects screen is displayed. For unloading in batch mode, see Executing NATUNLD in Batch Mode.

Below is information on:

- Functions for Programming Objects
- Parameters for Programming Objects
- Work File Name and Type
  (see the section Introduction)

Functions for Programming Objects

From the Unload Programming Objects screen, you can invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Unload All/Individual Objects	Unloads objects which exist in any form: in saved form, or cataloged form or both.
S		Unload only Saved Objects	Unloads only objects which exist in saved form.
C		Unload only Cataloged Objects	Unloads objects which exist in cataloged form.
W		Unload Saved and Cataloged Objects	Unloads objects which exist in both saved and cataloged form. (*)
B		Unload Stowed Objects	Unloads objects which exist in both saved and cataloged form and which were saved and cataloged at the same time. The check that the saving and cataloging of an object occurred at the same time ensures that the saved and cataloged form of an object actually belong together. (*)
	PF4 (E-Msg) ERROR	Unload Error Messages	See the section Error Messages.
	PF5 (DDMs) DDM	Unload DDMs	See the section DDMs.
	PF7 (Del.) DELETE	Unload Delete Instructions	See the section Delete Instructions for Programming Objects.
	PF10 (Files) FILES	File Assignments for NATUNLD	See File Assignments in the section Introduction.

* Objects of type copycode, text and recording - although they can exist only in saved, but not in cataloged form - are also processed by these functions.

If you want to unload DDMs, you press PF5 (DDMs) on the Unload Programming Objects screen to invoke the function Unload DDMs, as described in the section DDMs.

If you want to write delete instructions to the work file, you press PF7 (Del.) on the Unload Programming Objects screen to invoke the function Unload Delete Instructions, as described in the section Delete Instructions for Programming Objects.

Each of the above functions unloads Natural programming objects from one or more libraries on the system files FNAT or FUSER. Libraries whose names begin with SYS (except for the library SYSTEM) are, by default, unloaded from the FNAT file; all other libraries are unloaded from the FUSER file. See also File Assignments in the section Introduction.

To execute one of the functions on the Unload Programming Objects screen, enter the corresponding function code and, if required, the parameters described below.

Parameters for Programming Objects

The Unload Programming Objects screen provides the following parameters:

Field	Explanation
From Library	The name of the library from which the objects are to be unloaded. By default, the library is selected from which NATUNLD was called. To select multiple libraries, see Names and Ranges in the section Introduction. **Note:** Under Natural Security, the setting of the NATUNLD utility profile or the Utility option in the corresponding library profile determines whether you are authorized to unload objects from a selected library. If the Natural Security option Transition Period Logon is set to **Y**, objects from libraries which have not been defined to Natural Security can also be unloaded.
To Library	The name of the library into which the unloaded objects are to be loaded with NATLOAD. If you leave this field blank or enter and asterisk (*), the name of the library specified in the From Library field is used. **Note:** If you have specified a range as library in the From Library field, the specification in the To Library field name may be a range too, but the number of characters before the asterisk (*) **must not** exceed the number of characters before the asterisk in the From Library field.
Object Name	The name of the object to be unloaded. If you leave this field blank or enter an asterisk (*), all objects in the library (or libraries) specified under From Library are unloaded. Within the object name, you can specify any combination of asterisk notation (*) and wildcard notation (?) — in the same manner as described for the system command LIST in the Natural User's Guide — to unload a specific range of objects. See also Names and Ranges in the section Introduction.
User ID	If you enter a user ID in this field, only those objects are unloaded which were saved or cataloged under this user ID. To specify a range of user IDs, see Names and Ranges in the section Introduction.
Symbol Table	Function not implemented.
PC Download	Function not implemented.
Set Number	Function not implemented.
Xref Data	Only applies with Predict Version 2.3 or above and if the Predict Active References feature is installed. In this field, you specify whether the corresponding cross-reference data are to be unloaded with the objects: Y If a cataloged object has cross-reference data, these are unloaded with the object. N Only the cataloged object is unloaded, but any cross-reference data are ignored (this is the default).
Object Type	The type of objects to be unloaded. If you leave this field blank or enter an asterisk (*), all objects with the names specified under Object Name are unloaded regardless of their types. For a selection list of possible object types, either enter a question mark (?) in this field or press PF1 (Help). **Note:** You can specify several object types at the same time and in any sequence; for example, specifying PAM unloads programs, parameter data areas and maps.

Field	Explanation
Date/Time From	Only those objects are unloaded which were saved or cataloged on or after/before this date and time. See Dates and Ranges in the section Introduction for further details.
Date/Time To	

DDMs

To invoke the Unload DDMs function

- Enter the command DDM in the command line.
  Or press PF5 (DDMs) on the Unload Programming Objects or Unload Error Messages screen.
  The Unload DDMs screen is displayed.

For unloading in batch mode, see Executing NATUNLD in Batch Mode.

Below is information on:

- Functions for DDMs
- Parameters for DDMs
- Work File Name and Type
  (see the section Introduction)

Functions for DDMs

Each of the functions below unloads DDMs from one or more libraries on the system files FNAT or FUSER on OpenVMS and UNIX; libraries whose names begin with SYS (except the library SYSTEM) are, by default, unloaded from the FNAT file; all other libraries are unloaded from the FUSER file. See also File Assignments in the section Introduction.

From the Unload DDMs screen, invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Unload All/Individual DDMs	Unloads DDMs which exist in any form: in saved form, or cataloged form or both.
S		Unload only Saved DDMs	Unloads only DDMs which exist in saved form.
C		Unload only Cataloged DDMs	Unloads only DDMs which exist in cataloged form.
W		Unload Saved and Cataloged DDMs	Unloads DDMs which exist in both saved and cataloged form.
B		Unload Stowed DDMs	Unloads DDMs which exist in both saved and cataloged form and which were saved and cataloged at the same time. The check that the saving and cataloging of a DDM occurred at the same time ensures that the saved and cataloged form of a DDM actually belong together.
	PF4 (E-Msg) ERROR	Unload Error Messages	See the section Error Messages.
	PF5 (Objct) OBJECTS	Unload Programming Objects	See the section Programming Objects.
	PF7 (Del.) DELETE	Unload Delete Instructions for DDMs	See the section Delete Instructions for DDMs.
	PF10 (Files) FILES	File Assignments for NATUNLD	See File Assignments in the section Introduction.

Parameters for DDMs

To execute one of the functions on the Unload DDMs screen, enter the corresponding function code and, if required, the following parameters:

Field	Explanation
From Library	The name of the library from which the DDMs are to be unloaded. Here the same applies as described for From Library in Parameters for Programming Objects.
To Library	The name of the library into which the DDMs are to be loaded with NATLOAD. Here the same applies as described for To Library in Parameters for Programming Objects.
DDM Name	The name of the DDM to be unloaded. To unload all DDMs from the system file, leave this field blank or enter an asterisk (*). To unload multiple DDMs, use the same range notations as described for Object Name in Parameters for Programming Objects.
DDM DBID	To unload only DDMs which have a specific database ID, enter that database ID in this field. Database ID it the ID of the physical database file of which the DDM is the logical representation.
DDM FNR	To unload only DDMs which have a specific file number, enter that file number in this field. File number is the number of the physical database file of which the DDM is the logical representation.
PC Download	Function not implemented.

Error Messages

Each of the functions below unloads Natural system error messages from the system file FNAT, and user-defined error messages from one or more libraries on the system files FNAT or FUSER; libraries whose names begin with SYS (except for the library SYSTEM) are, by default, unloaded from the FNAT file; all other libraries are unloaded from the FUSER file. See also File Assignments in the section Introduction.

To invoke the Unload Error Message function

- Enter the command ERROR in the command line.
  Or press PF4 (E-Msg) on the Unload Programming Objects or Unload DDMs screen.
  The Unload Error Messages screen is displayed.

For unloading in batch mode, see Executing NATUNLD in Batch Mode.

Below is information on:

- Functions for Error Messages
- Parameters for Error Messages
- Work File Name and Type
  (see the section Introduction)

Functions for Error Messages

From the Unload Error Messages screen, invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Unload Short and Long Error Messages	Unloads error messages which exist in short and/or long form.
S		Unload only Short Error Messages	Unloads only error messages which exist in short form.
L		Unload only Long Error Messages	Unloads only error messages which exist in long form.
H		Unload Natural Help Texts	Function not implemented.
	PF4 (Objct) OBJECTS	Unload Programming Objects	See the section Programming Objects.
	PF5 (DDMs) DDM	Unload DDMs	See the section DDMs.
	PF7 (Del.) DELETE	Unload Delete Instructions for Error Messages	See the section Delete Instructions for Error Messages.
	PF10 (Files) FILES	File Assignments for NATUNLD	See the section File Assignments in the Introduction.

Parameters for Error Messages

To execute one of the functions on the Unload Error Messages screen, enter the corresponding function code and, if required, the following parameters (the function Unload Natural Help Texts requires no parameters):

Field	Explanation
User/Natural	Type of message to be unloaded: U user-defined error messages, N Natural system messages.
From Library	Only applies to user-defined error messages. The name of the library from which the user-defined error messages are to be unloaded. Here the same applies as described for From Library in Parameters for Programming Objects.
To Library	Only applies to user-defined error messages. The name of the library into which the user-defined error messages are to be loaded with NATLOAD. Here the same applies as described for To Library in Parameters for Programming Objects.
Error Number	The range of error message numbers to be unloaded.
Language Codes	The language code(s) of the error messages to be unloaded. For valid language codes, see the system variable *LANGUAGE in the Natural Reference documentation. By default (*), messages in any language are unloaded.
PC Download	Function not implemented.

Delete Instructions for Programming Objects

Use this function to write delete instructions for specific programming objects to the work file. When these instructions are loaded with NATLOAD into the target environment, they cause the specified objects to be deleted from the target environment.

To invoke the Unload Delete Instructions function

- Enter the command DELETE in the command line.
  Or press PF7 (Del.) on the Unload Programming Objects screen.
  The Unload Delete Instructions screen is displayed.

Below is information on:

- Functions for Delete Instructions - Programming Objects
- Parameters for Delete Instructions - Programming Objects
- Work File Name and Type
  (see the section Introduction)

Functions for Delete Instructions - Programming Objects

From the Unload Delete Instructions screen, you can invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Delete All/Individual Objects	Delete instructions for objects which exist in any form: in saved form, or cataloged form or both.
S		Delete only Saved Objects	Delete instructions for objects which exist in saved form.
C		Delete only Cataloged Objects	Delete instructions for objects which exist in cataloged form.
	PF4 (E-Msg) ERROR	Unload Delete Instructions for Error Messages	See the section Delete Instructions for Error Messages.
	PF5 (DDMs) DDM	Unload Delete Instructions for DDMs	See the section Delete Instructions for DDMs.
	PF7 (Unld) UNLOAD	Unload Programming Objects	See the section Programming Objects.
	PF10 (Files) FILES	File Assignments for NATUNLD	See File Assignments in the section Introduction.

Parameters for Delete Instructions - Programming Objects

To execute one of the functions, enter the appropriate function code and the following parameters:

Field	Explanation
Library	The name of the library from which the objects are to be deleted. You can only specify the name of a single library; a range of multiple libraries cannot be specified. By default, the library is selected from which NATUNLD was called.
Object Name	The name of the object to be deleted. If you leave this field blank or enter an asterisk (*), all objects in the specified library will deleted. To delete multiple objects, see Names and Ranges in the section Introduction.
PC Download	Function not implemented.

Delete Instructions for DDMs

Use this function to write delete instructions for specific DDMs to the work file. When these instructions are loaded with NATLOAD into the target environment, they cause the specified DDMs to be deleted from the target environment.

To invoke the Unload Delete Instructions for DDMs function

- Enter the command DELETE in the command line.
  Or press PF7 (Del.) on the Unload DDMs screen.
  The "Unload Delete Instructions for DDMs" screen is displayed.

Below is information on:

- Functions for Delete Instructions - DDMs
- Parameters for Delete Instructions - DDMs
- Work File Name and Type
  (see the section Introduction)

Functions for Delete Instructions - DDMs

From the Unload Delete Instructions for DDMs screen, invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Delete All/Individual DDMs	Delete instructions for DDMs which exist in any form: in saved form, or cataloged form or both.
S		Delete only Saved DDMs	Delete instructions for DDMs which exist in saved form.
C		Delete only Cataloged DDMs	Delete instructions for DDMs which exist in cataloged form.
	PF4 (E-Msg) ERROR	Unload Delete Instructions for Error Messages	See the section Delete Instructions for Error Messages.
	PF5 (Objct) OBJECTS	Unload Delete Instructions for Programming Object	See the section Delete Instructions for Programming Objects.
	PF7 (Unld) UNLOAD	Unload DDMs	See the section DDMs.
	PF10 (Files) FILES	File Assignments	See File Assignments in the section Introduction.

Parameters for Delete Instructions - DDMs

To execute one of the functions, enter the appropriate function code and the following parameters:

Field	Explanation
Library	The name of the library from which the DDMs are to be deleted. You can only specify the name of a single library; a range of multiple libraries cannot be specified. By default, the library from which NATUNLD was called is selected.
DDM Name	The name of the DDM to be deleted. If you leave this field blank or enter an asterisk (*), all DDMs will be deleted from the target system file. To delete multiple objects, see Names and Ranges in the section Introduction.
PC Download	Function not implemented.

Delete Instructions for Error Messages

Use this function to write delete instructions for specific error messages to the work file. When these instructions are loaded with NATLOAD into the target environment, they cause the specified error messages be deleted from the target environment.

To invoke the Unload Delete Instructions function for error messages

- Enter the command DELETE in the command line.
  Or press PF7 (Del.) on the Unload Error Messages screen.
  The Unload Delete Instructions screen for error messages is displayed.

Below is information on:

- Functions for Delete Instructions - Error Messages
- Parameters for Delete Instructions - Error Messages
- Work File Name and Type
  (see the section Introduction)

Functions for Delete Instructions - Error Messages

From the Unload Delete Instructions screen for error messages you invoke the following functions by entering a code, or a command in the command line, or by pressing a PF key:

Code	PF Key Command	Function	Explanation
A		Delete Short and Long Error Messages	Delete instructions for error messages which exist in short and/or long form.
L		Delete only Long Error Messages	Delete instructions for error messages which exist in long form.
	PF4 (Objct) OBJECTS	Unload Delete Instructions for Programming Objects	See the section Delete Instructions for Programming Objects.
	PF5 (DDMs) DDM	Unload Delete Instructions for DDMs	See the section Delete Instructions for DDMs.
	PF7 (Unld) UNLOAD	Unload Error Messages	See the section Error Messages.
	PF10 (Files) FILES	File Assignments for NATUNLD	See File Assignments in the section Introduction.

Parameters for Delete Instructions - Error Messages

To execute one of the functions, enter the appropriate function code and the following parameters:

Field	Explanation
User/Natural	Type of message to be deleted: U user-defined error messages, N Natural system messages.
Library	Applies to user-defined error messages only. The name of the library from which the messages are to be deleted. You can only specify the name of a single library; a range of multiple libraries cannot be specified. By default, the library is selected from which NATUNLD was called.
Error Number	The range of error message numbers to be deleted.
Language Codes	The language code(s) of the error messages to be deleted. For valid language codes, see the system variable *LANGUAGE in the Natural Reference documentation. By default (*), messages in any language are deleted.
PC Download	Function not implemented.

Executing NATUNLD in Batch Mode

For the execution of NATUNLD in batch mode, use direct commands.

When you use a direct command, observe the following rules:

- The profile parameters PS and LS should be set to at least PS=78 and LS=220.
- The keyword NATUNLD can be placed in a line by itself.
- To separate the individual parameters of a direct command from one another, use either blanks or the input delimiter character as defined by the session parameter ID; the default is comma.
- If the string of parameters is longer than a single line, you have to specify the character defined with the session parameter CF (default is **%**) at the end of the line to indicate that the specification of parameters continues on the next line.
  This is only possible if the keyword NATUNLD is placed in a line by itself and the input delimiter character is used to separate the individual parameters from one another.
- To indicate the end of the command input, specify a line containing the keyword END or one of its synonyms.

The syntax of the direct commands is shown in the section NATUNLD Direct Command Syntax.

Condition Codes and User Exits in Batch Mode

NATUNLD processing in batch mode terminates with one of the following condition codes:

Code	Explanation
0	Unloading executed successfully.
37	The objects requested for unloading could not be found. With Condition Code 37, the user exit UNLDEX01 (*), if available, will be invoked during processing and you will be prompted whether to continue or terminate unloading.
38	Unloading request rejected by Natural Security: If you attempt to unload objects from a library you are not allowed to access due to Natural Security definitions, NATUNLD terminates with Condition Code 38. If available, user exit UNLDEX02 will be invoked. Here you can specify whether to continue unloading without that library or terminate NATUNLD with Condition Code 38. The source code of that user exit UNLDEX02 is provided under the name U-S-EX02 in library SYSUNLD. To make it available, you have to stow it under the name UNLDEX02, either in the library SYSUNLD or in one of its steplibs.
40	An error occurred; unloading terminated. With Condition Code 40, the user exit UNLDEX01 (*), if available, will be invoked at the termination of processing.

* The source code of the user exit UNLDEX01 is provided under the name U-S-EX01 in the library SYSUNLD. To make it available, you have to stow it under the name UNLDEX01, either in the library SYSUNLD or in one of its steplibs.

Note:
The names of the user exits' sources and objects are different to ensure that the overwriting of the sources by an update installation does not affect the objects.

NATUNLD Direct Command Syntax

- General Information
- NATUNLD Syntax Diagrams
- Examples of Direct Commands for NATUNLD in Batch Mode

General Information

The direct commands are available in batch mode and online. When you enter a direct command online, the entire command must fit into one command input line. After the execution of the direct command, you can enter another NATUNLD direct command, or END to leave NATUNLD, on the Input Command Data screen.

The individual items within each "with-...-clause" and "where-...-clause" can be specified in any sequence.

If you specify the parameters WORKFILE and WORKFILETYPE, specify them only once (as it applies to the entire work file); you have to specify it in the first possible "with-...-clause" or "delete-...-clause".

For error messages, the parameters FROM LIBRARY and TO LIBRARY are only valid for user-defined messages, not for Natural system messages.

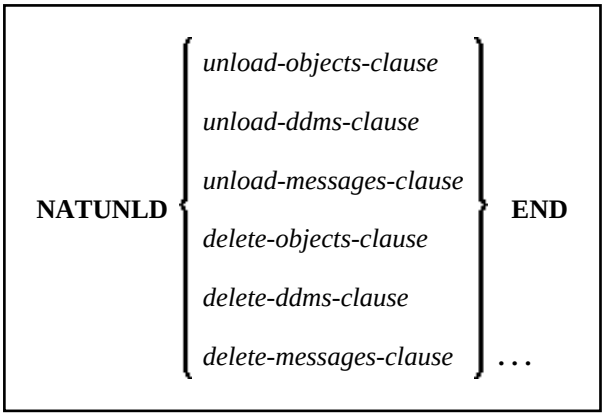
The values following the keyword DIC in the "object-with-clause" must be separated by commas. The commas must also be specified for omitted values.
For example: DIC (10,,SECRET,12)
If the session parameter ID has been set to comma, use slashes (/) instead of commas as separators.

For better readability, synonymous keywords are omitted from the syntax diagrams below. An underlined portion of a keyword represents an acceptable abbreviation.

Valid synonyms are:

Keyword	Synonym
DDM	VIEW
END	STOP
	QUIT
	FIN
	.
FROM	FM
PASSWORD	PSW
UNLOAD	UNLD
WORKFILETPYE	WFTYPE

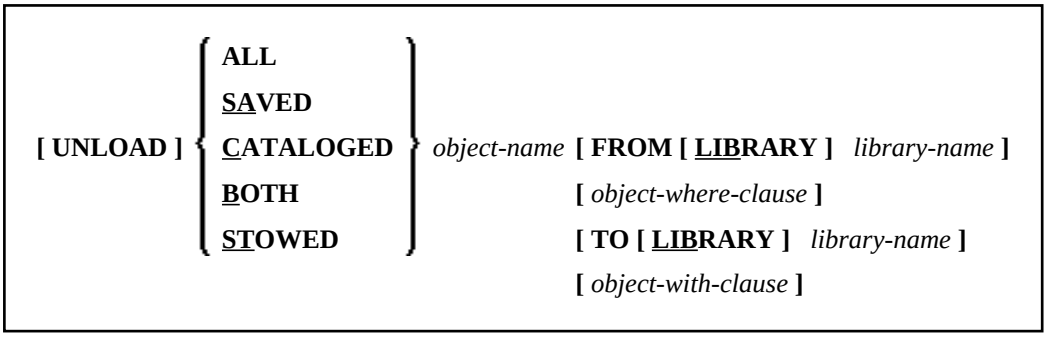
NATUNLD Syntax Diagrams



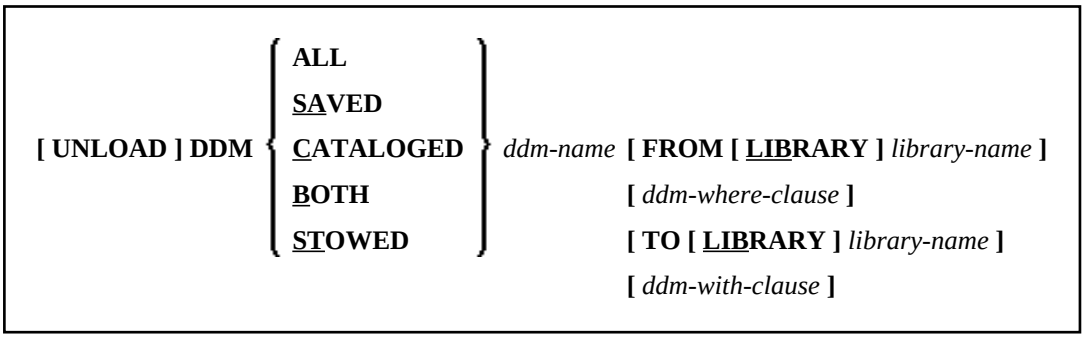
Below is information on:

- unload-objects-clause
- unload-ddms-clause
- unload-messages-clause
- object-where-clause
- object-with-clause
- ddm-where-clause
- ddm-with-clause
- message-with-clause
- delete-objects-clause
- delete-ddms-clause
- delete-messages-clause

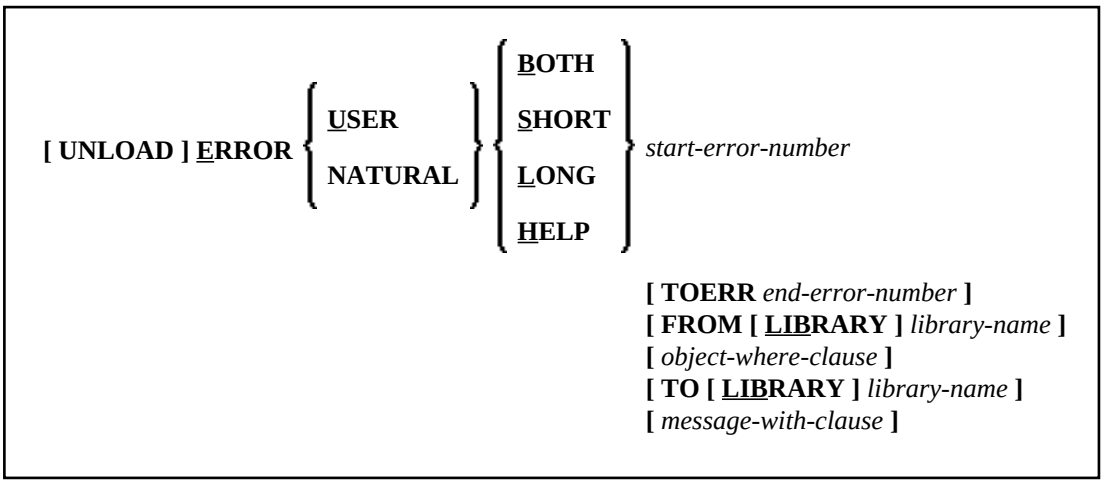
unload-objects-clause - for Programming Objects



unload-ddms-clause - for DDMs

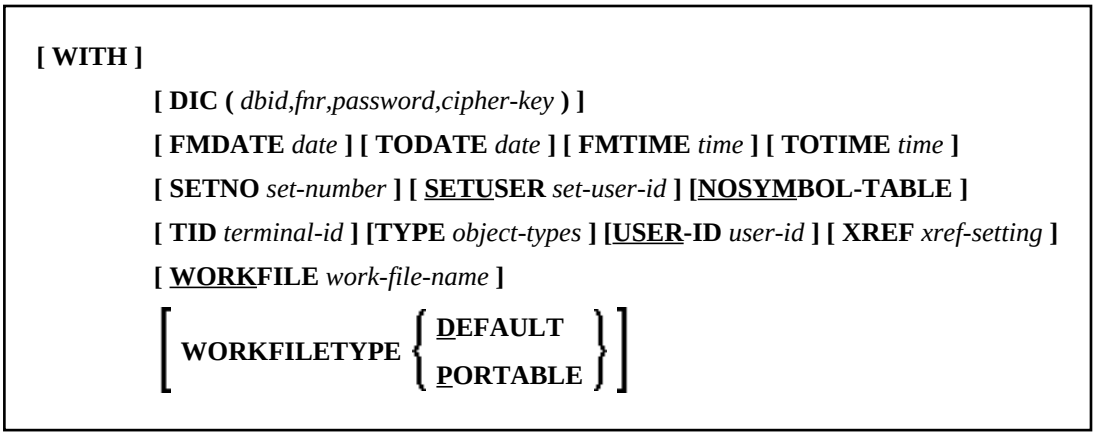


unload-messages-clause - for Error Messages



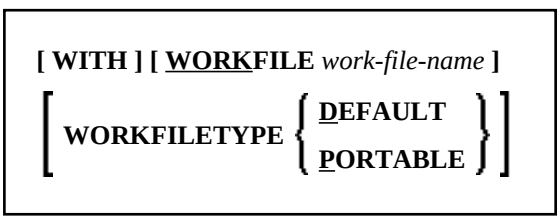
object-where-clause - for Programming Objects and Error Messages

object-with-clause - for Programming Objects

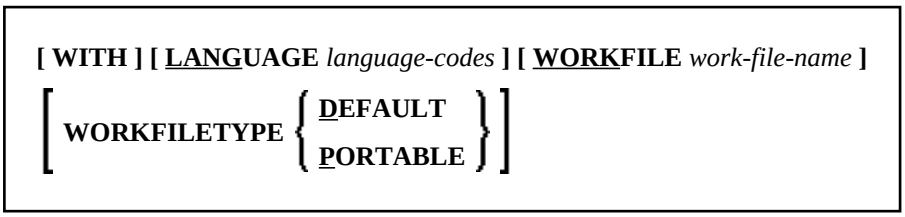


ddm-where-clause

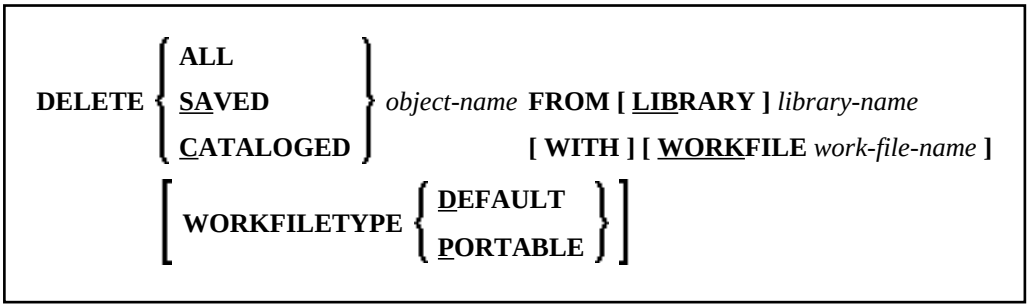
ddm-with-clause



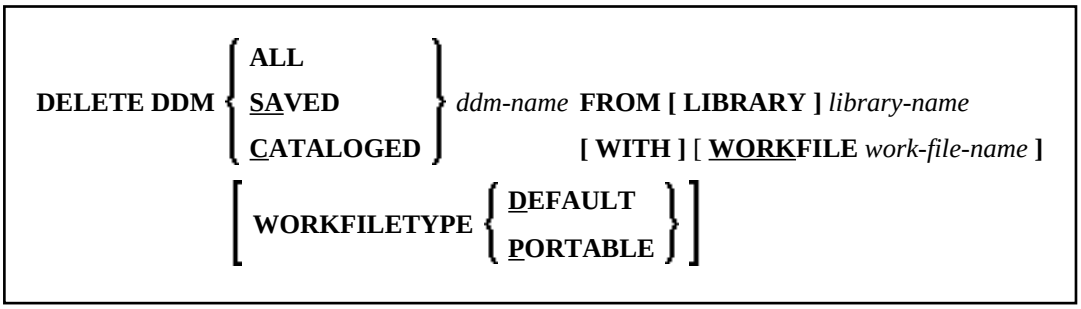
message-with-clause



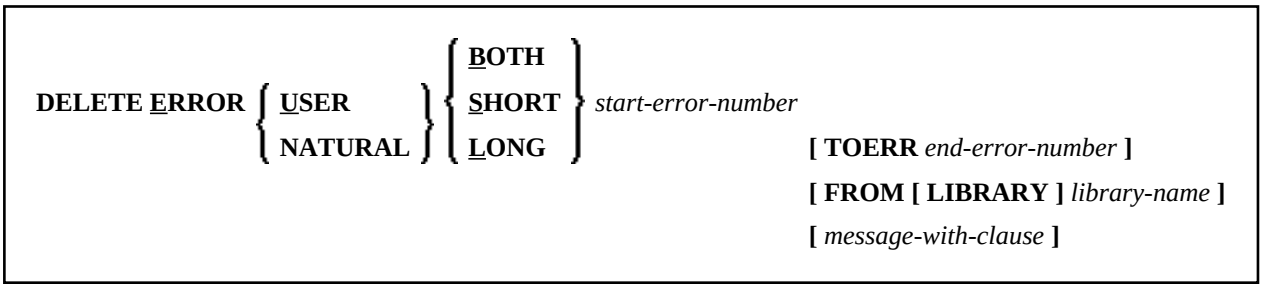
delete-objects-clause - Delete Instructions for Programming Objects



delete-ddms-clause - Delete Instructions for DDMs



delete-messages-clause - Delete Instructions for Error Messsages



Examples of Direct Commands for NATUNLD in Batch Mode

In this example, all saved and/or cataloged programming objects of type program whose names start with PGM are unloaded from the library TESTLIB.

```
NATUNLD
ALL PGM* FROM TESTLIB WITH TYPE P
END
```

In this example, NATUNLD is placed in a separate line, and commas instead of blanks are used as separator characters. Apart from that, the example is identical to the previous one.

```
NATUNLD
ALL,PGM*,FROM,TESTLIB,WITH,TYPE,P
END
```

In this example, all programming objects saved on or after the 1st May 2000 are unloaded from the library OLDLIB, which is located on Database 100 in File Number 160. The objects are to be loaded into the library NEWLIB.

This example also shows the use of the continuation indicator (%) for a parameter string that is longer than a single line.

```
NATUNLD
SAVED,*,FROM,OLDLIB,WHERE,DBID,100,FNR,160,%
FMDATE,00-05-01,TO,NEWLIB
END
```

In this example, all programming objects are unloaded from the library OLDLIB - together with their corresponding cross-reference data which are located on an FDIC file with File Number 20 on Database 10. The objects are to be loaded into the library NEWLIB.

```
NATUNLD
ALL,*,FROM,OLDLIB,DIC,(10/20//),TO,NEWLIB,%
WITH,XREF,Y
END
```

This example shows the specification of multiple unloading instructions in one command.

```
NATUNLD
ALL,PROG1,FROM,TESTORD,DBID,1,FNR,6,PSW,PASSWD,TO,ORDERSMAIN
CATALOGED,PGM*,FROM,TESTLIB,TO,PRODLIB,WITH,TYPE,PNS SAVED,PROG1,TO,NEWLIB
END
```

NATUNLD Report

The NATUNLD utility generates (online and in batch mode) a report containing a list of the objects that were unloaded.

When you leave NATUNLD after the report has been displayed, a statistical report will be displayed listing the number of objects processed.

